QUIZ NAVIGATION

1 2 3 4 5
6 7 8 9 10

Show one page at a time

Finish review

Started on	Friday, 11 October 2024, 6:04 PM
State	Finished
Completed on	Friday, 11 October 2024, 6:12 PM
Time taken	7 mins 34 secs
Grade	**7.00** out of 10.00 (**70%**)

Question 1

ID: 50160

Correct

Flag question

Send Feedback

THE NEXT 2 QUESTIONS INCLUSIVE REFER TO THE FOLLOWING CASE:

DK is a 72-year-old male with a history of acute coronary syndrome, hypertension, dyslipidemia, diabetes, depression, and newly diagnosed mild Alzheimer's disease (AD). He had a myocardial infarction more than 20 years ago and had a stent put in his right coronary artery. His medications include enteric-coated acetylsalicylic acid 81 mg PO daily, ramipril 5 mg PO BID, metoprolol 100 mg PO BID, atorvastatin 80 mg PO daily at bedtime, metformin 1000 mg PO BID, empagliflozin 25 mg PO daily, and paroxetine 20 mg PO daily. His heart rate from earlier today is 58 beats per minute and his blood pressure reading is 135/85 mmHg. His most recent HbA1c reading from three months ago is within target at 6.8%. His statin levels from the same time are also within target. His physician is thinking about starting a cholinesterase inhibitor.

What is the most important parameter to monitor in this patient if cholinesterase inhibitor therapy is initiated?

Select one:

- a. Heart rate and signs of syncope ✔

Rose Wang (ID:113212) this answer is correct. Heart rate and signs of syncope are the most important to monitor since the patient is on metoprolol therapy as well.

- b. GI bleeding ✖
- c. Sleep patterns ✖
- d. Weight ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's disease

LEARNING OBJECTIVE:

Identify important monitoring parameters in patient-based scenarios.

BACKGROUND:

It is important to monitor for efficacy and safety whenever starting a new drug, especially when the patient is on other medications or has comorbidities. Cholinesterase inhibitors have side effects including nausea/vomiting, syncope/bradycardia, GI bleeding, seizures, sleep disturbances and diarrhea. Heart Rate (HR) and signs of syncope are important to monitor in patients on other medications which can cause bradycardia or arrhythmias (e.g. beta-blockers, non-dihydropyridine calcium channel blockers), or a lowering of blood pressure (e.g. ACE inhibitors). GI bleeding can occur and this is the reason why the drug is started at a low dose to minimize this side effect. This should be monitored especially with patients on other drugs which can cause bleeds or if there is a history of peptic ulcers present.

RATIONALE:

Correct Answer:

- **Heart rate and signs of syncope** - Heart rate and signs of syncope are the most important to monitor since the patient is on metoprolol therapy as well.

Incorrect Answers:

- **GI bleeding** - This should be monitored but it is not the most important parameter given that there is no history of peptic ulcers.
- **Sleep disturbances** - Sleep disturbances can occur but it is not the most important parameter to monitor for.
- **Anorexia or weight loss** - Anorexia or weight loss can occur but it is not the most important parameter to monitor for.

TAKEAWAY/KEY POINTS:

Cholinesterase inhibitors can cause bradycardia and syncope, thus patients on other medications that can decrease heart rate (e.g. beta-blockers, non-dihydropyridine calcium channel blockers) should be closely monitored. Other parameters should also be monitored, but in this case, are not as important since the patient is most vulnerable to cardiac side effects due to concurrent medications.

REFERENCE:

[1] Malone DM, Lindesay J. Cholinesterase inhibitors and cardiovascular disease: a survey of old age psychiatrists' practice. *Age Ageing*. 2007;36(3):331-333. doi:10.1093/ageing/afm002. http://ageing.oxfordjournals.org/content/36/3/331.full.
[2] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Heart rate and signs of syncope

Question 2

ID: 50163

Correct

Flag question

Send Feedback

3 years later, DK's Alzheimer's disease (AD) is still being treated with donepezil 10 mg PO daily in the morning. During this time, his symptoms have remained stable and his family had not reported any decline in his memory. However, recently he has been showing changes in his cognitive function, for example, forgetting important personal history such as his current home address and phone number. His family also reports one recent occasion where he left the house and was found by police wandering on the other side of town. He has not experienced any adverse effects secondary to donepezil throughout his treatment. His family asks you if there is anything that can be done to maximize his medication therapy.

What is the most appropriate treatment change that should occur at this time?

Select one:

a. Taper off donepezil and start rivastigmine ✖

b. Taper off donepezil and start memantine ✖

c. Add memantine ✔

Rose Wang (ID:113212) this answer is correct. Memantine is generally added to a cholinesterase inhibitor for moderate to severe AD.

d. No change is necessary at this time as a decline in symptoms is an expected outcome with Alzheimer's disease ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Understand when memantine is indicated for the treatment of Alzheimer's Disease (AD).

BACKGROUND:

One of our goals of therapy for patients with AD is to preserve and stabilize cognitive function. This is often achieved modestly by drug therapies such as cholinesterase inhibitors and NMDA antagonists. Donepezil is a cholinesterase inhibitor that is indicated for use in mild to severe AD to stabilize and preserve cognitive function. Donepezil works by increasing acetylcholine levels in the brain, which we know there is an imbalance of in AD. It takes 3-6 months to show efficacy. It is important to note that efficacy in AD doesn't necessarily mean an improvement in cognition, but rather efficacy means slowing the progression/stabilizing cognitive decline. If a patient's cognitive function has not worsened while on the drug, this would mean the drug is working. If the patient is not experiencing adverse effects and their cognitive function has improved or remained stable, we can start to titrate up the dose as tolerated. The target dose of donepezil is 10 mg PO daily and the dose may be titrated up every 4 weeks. The reason for slow titration is to minimize side effects that the patient may experience, including nausea, vomiting, diarrhea, fatigue, sleep disturbances, increased urinary frequency, headache, anorexia/weight loss, bradycardia, and syncope. Note that patients are at risk for withdrawal symptoms secondary to abrupt discontinuation of cholinesterase inhibitor therapy and must be slowly tapered off the medication as well. Patients may be switched to another cholinesterase inhibitor within the same class if they experience worsening of symptoms despite being on a maximally tolerated dose, if they experience intolerable side effects, or if they have trouble with adherence (e.g. cannot swallow tablets). Specifically, if the patient's symptoms have worsened within the first year of initiation (at least 6 months) despite being on the maximum dosage, then consider switching to another cholinesterase inhibitor rather than starting combination therapy with memantine. This is because memantine provides little additional benefit to cognition, function (ADLs), behaviour, and mood in moderate to severe AD. Memantine may be started if patients have moderate to severe dementia and require therapy in addition to cholinesterase inhibitors to prevent further decline. Consider combination therapy in those who have been stable on a cholinesterase inhibitor for several years, who are now having a perceived lack of benefit from it. At this point, lack of treatment response is likely due to the natural course of the disease. Memantine may also be started as monotherapy in patients who did not tolerate cholinesterase inhibitor therapy.

RATIONALE:

Correct Answer:

- **Add memantine** - Memantine is indicated for use with a cholinesterase inhibitor in patients with moderate to severe Alzheimer's Disease who require additional therapy to prevent further cognitive decline.

Incorrect Answers:

- **Taper off donepezil and start rivastigmine** - DK has experienced benefits from donepezil for three years, this is likely a natural progression of AD rather than donepezil treatment failure.
- **Taper off donepezil and start memantine** - DK does not need to be tapered off donepezil, memantine is generally added for moderate to severe AD, but tapering may be necessary to avoid withdrawal symptoms

withdrawal symptoms.

- **No change is necessary at this time as a decline in symptoms is an expected outcome with Alzheimer's disease** - A decline in symptoms is an expected outcome of AD, however, memantine can be added to a cholinesterase inhibitor to slow progression at this stage of DK's AD.

TAKEAWAY/KEY POINTS:

Memantine may be started if patients have moderate to severe dementia and require therapy in addition to cholinesterase inhibitors to prevent further decline. Consider combination therapy in those who have been stable on a cholinesterase inhibitor for several years, who are now having a perceived lack of benefit from it. At this point, lack of treatment response is likely due to the natural course of the disease.

REFERENCE:

[1] Aricept. In: Compendium of Pharmaceuticals and Specialties. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca. [2] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Add memantine

Question 3

ID: 50213

Correct

Flag question

Send Feedback

You are working as a clinical pharmacist at a family health team. One of the physicians pages you to discuss a mutual patient. BT is a 69-year-old male who was recently diagnosed with Lewy Body Dementia (LBD). He is a retired accountant, married, with four children. BT's course of disease began with manageable symptoms resembling a movement disorder similar to Parkinson's disease, including rigidity and a shuffling gait. However, the symptoms have since developed to a point where BT is having visual hallucinations, in particular, seeing numbers moving around in front of him. BT has disorganized speech and is often unaware of his surroundings due to fluctuating consciousness. BT's physician would like to start him on medication for LBD.

- **Allergies: NKDA**
- **Past medical history: dyslipidemia, diabetes, hypertension, hypothyroidism**
- **Medications: atorvastatin 20 mg PO daily at bedtime, metformin 1000 mg PO BID, candesartan 32 mg PO daily, levothyroxine 112 mcg PO daily in the morning**
- **Social history: retired accountant, lives at home with his wife (who is the primary caregiver), has four children**
- **Vital signs: BP = 132/82 mmHg, HR = 65 bpm, afebrile**

Which of the following medications is preferred for the treatment of LBD?

Select one:

a. Rivastigmine ✔

Rose Wang (ID:113212) this answer is correct. Rivastigmine is recommended first-line for the treatment of Lewy body dementia.

b. Galantamine ✖

c. Memantine ✖

d. Haloperidol ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Identify appropriate options to manage Lewy Body Dementia (LBD).

BACKGROUND:

Lewy Body Dementia (LBD) is a progressive type of dementia caused by the accumulation of Lewy bodies in the central nervous system. Similar to the accumulation of tau proteins and beta-amyloid proteins, Lewy bodies are the accumulation of misfolded alpha-synuclein proteins. Beta-amyloid plaques and neurofibrillary tangles (tau protein clumps) may also be present in LBD as well. Patients will present with early-onset visual hallucinations, drowsiness, altered rapid eye movements (REM) sleeping patterns, fluctuating consciousness, movement disorders similar to Parkinson's disease (dyskinesia, rigidity, or shuffling), and disorganized speech. Patients usually have non-cognitive symptoms such as hallucinations or parkinsonism before cognitive symptoms become noticeable. Parkinson's disease dementia (PDD) is dementia that appears after a patient has been diagnosed with Parkinson's disease (PD). Both LBD and PDD are similar in presentation and are generally treated the same. For patients with LBD and PDD, donepezil or rivastigmine may be used depending on patient preference (e.g. dose frequency and route of administration). Cholinesterase inhibitors are less likely to help with cognition in LBD but may help with hallucinations. Galantamine is reserved for patients who do not tolerate the other cholinesterase inhibitors (e.g. rashes secondary to rivastigmine patch or severe nausea with donepezil) due to its limited evidence in this type of dementia. Studies have also found that the use of antipsychotics may worsen psychosis in patients with LBD, as well as precipitate severe parkinsonism effects. First-Generation Antipsychotics (FGA) such as haloperidol are not recommended due to their adverse effect profiles including extrapyramidal symptoms and increased mortality compared to Second-Generation Antipsychotics (SGA). Although SGAs are preferred in patients with dementia, they still show a 1.6-fold increase in mortality compared to placebo. Therefore, it is important to use them only when the benefits outweigh the risks. If an agent must be chosen, quetiapine may be preferred because it is the least associated with EPS.

RATIONALE:

Correct Answer:

- **Rivastigmine** - Rivastigmine is recommended first-line for the treatment of Lewy body dementia.

Incorrect Answers:

- **Galantamine** - Galantamine is not recommended first-line for the treatment of Lewy body dementia.
- **Memantine** - Memantine is not recommended for the treatment of Lewy body dementia.
- **Haloperidol** - Haloperidol is not recommended for the treatment of Lewy body dementia.

TAKEAWAY/KEY POINTS:

For patients with LBD, donepezil or rivastigmine may be used depending on patient preference (e.g. dose frequency and route of administration). Cholinesterase inhibitors are less likely to help with cognition in LBD but may help with hallucinations. Galantamine is reserved for patients who do not tolerate the other cholinesterase inhibitors (e.g. rashes secondary to rivastigmine patch or severe nausea with donepezil) due to its limited evidence in this type of dementia.

REFERENCES:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.
[2] What Is Lewy Body Dementia? National Institute on Aging. https://www.nia.nih.gov/health/what-lewy-body-dementia.

The correct answer is: Rivastigmine

Question 4

ID: 50214

Correct

Flag question

Send Feedback

All of the following are appropriate goals of therapy for the treatment of Alzheimer's disease (AD), **EXCEPT**:

Select one:

- a. Restore memory and functioning back to pre-diagnosis baseline ✔

Rose Wang (ID:113212) this answer is correct. The restoration of memory and functioning back to the pre-diagnosis baseline is not an appropriate goal of therapy for AD.

- b. Minimize the side effects of medications ✖
- c. Involve caregivers in the patient care plan ✖
- d. Manage the cognitive, behavioural, and psychological symptoms associated with dementia ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Understand the goals of therapy for the treatment of Alzheimer's disease.

BACKGROUND:

The goals of therapy for the treatment of Alzheimer's disease (AD) include:

- Delay the disease progression (i.e., cognitive, social, and physical functioning)
- Manage the cognitive, behavioural and psychological symptoms associated with dementia
- Minimize the side effects of medications
- Alleviate caregiver burden by involving them in the patient care plan and educate the family about the progression of the disease

Unfortunately, complete restoration of memory and functioning is not an appropriate goal of therapy for patients with Alzheimer's disease. AD is progressive and current medications are only designed to stabilize and preserve cognitive, social, and physical functioning for as long as possible. There is no cure for AD at this time. Response to therapy should be determined from the combined clinician and caregiver input, instead of solely relying on a single tool or single criteria (cognition, behaviour, functional autonomy, caregiver burden). Therefore, clinicians must use all three methods (validated tool, clinical judgement, and caregiver input) to assist in the management of dementia.

RATIONALE:

Correct Answer:

- **Restore memory and functioning back to pre-diagnosis baseline** - The restoration of memory and functioning back to the pre-diagnosis baseline is not an appropriate goal of therapy for AD.

Incorrect Answers:

- **Minimizing the side effects of medications** - Minimizing the side effects of medications is an appropriate goal of therapy for AD.
- **Involving caregivers in the patient care plan** - Involving caregivers in the patient care plan is an appropriate goal of therapy for AD.
- **Manage the cognitive, behavioural, and psychological symptoms associated with dementia** - Managing the cognitive, behavioural, and psychological symptoms associated with dementia is an appropriate goal of therapy for AD.

TAKEAWAY/KEY POINTS:

Complete restoration of memory and functioning is not an appropriate goal of therapy for patients with Alzheimer's disease. AD is progressive and current medications are only designed to stabilize and preserve cognitive, social, and physical functioning for as long as possible. There is no cure for AD at this time.

REFERENCE:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Restore memory and functioning back to pre-diagnosis baseline

Question 5

ID: 50167

Incorrect

Flag question

Send Feedback

PL is a 70-year-old female who was diagnosed with Alzheimer's disease (AD) by her family physician about 1 year ago. She has been stabilized on donepezil 10 mg PO daily and has not reported any adverse effects since the medication was started. She currently lives with her daughter and her family, who have been helping take care of her. Recently, her daughter, who is her primary caregiver, has noticed that PL becomes mildly agitated in the evenings. In particular, she appears to get restless and wakes up at odd hours of the night. She often wanders around the house at this time and makes enough noise to wake up the others in the household. PL's daughter is worried that her mother might hurt herself by walking around in the dark and asks if you have any suggestions for her. She does not have any other medical conditions or take any other medications.

Which of the following medications is the most appropriate to add to PL's regimen at this time?

Select one:

a. Trazodone ✔

b. Diazepam ✖

c. Risperidone ✖

Rose Wang (ID:113212) this answer is incorrect. Second-generation antipsychotics (SGA) can be considered in those who suffer from severe psychosis or agitation and/or are a threat to themselves or to others around them.

d. Zopiclone ✖

Incorrect

Marks for this submission: 0.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Identify the appropriate therapy to manage sundowning in patients with Alzheimer's disease (AD).

BACKGROUND:

Many behavioural and mood complications often accompany the cognitive decline seen in patients with AD dementia. These complications include depression and anxiety, increased agitation, sundowning (worsening behavioural symptoms as it darkens outside), erectile dysfunction, orthostatic hypotension, sleep disturbances, and constipation. This list is not exhaustive. These complications should be dealt with to improve the quality of life of patients, as well as their caregivers. There is insufficient evidence for or against the use of trazodone in the management of agitated patients. However, if a patient also experiences sleep disturbances (such as disrupted sleep/wake cycle or sundowning), low-dose trazodone (50 mg at bedtime) may be used short-term. In the AD population, benzodiazepines are generally reserved for patients who have severe agitation and have failed therapy with all other agents. Otherwise, benzodiazepines should be avoided in all types of dementia because they can worsen symptoms. Furthermore, lorazepam, oxazepam and temazepam are preferred in the elderly because they do not have active metabolites. Other drugs such as zopiclone and zolpidem currently do not have evidence for managing agitation. Second-generation antipsychotics (SGA) such as aripiprazole, quetiapine, olanzapine, and risperidone can be used to treat response behaviours in all dementias if non-pharmacological options have failed. SGAs can also be considered in those who suffer from severe psychosis or agitation and/or are a threat to themselves or to others around them. Olanzapine and risperidone have the most evidence among the SGAs.

RATIONALE:

Correct Answer:

- **Trazodone** - Some evidence suggests that trazodone can manage agitated behaviour associated with sundowning in patients with dementia.

Incorrect Answers:

- **Benzodiazepines** - Benzodiazepines should be reserved for severe agitation. Furthermore, lorazepam, oxazepam, and temazepam are preferred in the elderly as they do not have active metabolites.
- **Second-generation antipsychotics (SGA)** - Second-generation antipsychotics (SGA) can be considered in those who suffer from severe psychosis or agitation and/or are a threat to themselves or to others around them.
- **Zopiclone** - There is no good evidence to suggest zopiclone can manage agitation in patients with AD.

TAKEAWAY/KEY POINTS:

Trazodone can be used to manage symptoms of sundowning in AD.

REFERENCE:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Trazodone

Question 6

ID: 50215

Correct

Flag question

Send Feedback

YT is a 75-year-old male who presents to your clinic with signs and symptoms consistent with cognitive decline and possible dementia. His physician asks you to conduct a comprehensive review of his medications and determine if he is on any medications that could be contributing to his cognitive decline. YT is currently taking ramipril 10 mg PO daily for hypertension, bisoprolol 5 mg PO daily for hypertension, indapamide 1.25 mg PO daily for hypertension, acetylsalicylic acid 81 mg PO daily for a remote history of myocardial infarction, rosuvastatin 40 mg PO daily for dyslipidemia, and oxybutynin extended-release 10 mg PO daily for urinary incontinence.

Which of YT's current medications may be contributing to his cognitive decline?

Select one:

a. Oxybutynin ✔

Rose Wang (ID:113212) this answer is correct. Oxybutynin is an anticholinergic drug which is known to worsen cognition in elderly patients.

b. Ramipril ✖

c. Acetylsalicylic acid ✖

d. Indapamide ✖

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Identify drugs which can cause a cognitive decline in elderly patients and contribute to symptoms of dementia.

BACKGROUND:

Many drugs can potentially be inappropriate in elderly patients because they can increase the risk of falls, cognitive decline, delirium, and dementia. These drugs should be tapered and discontinued when possible in elderly patients, especially if they are showing signs of cognitive decline or have been diagnosed with dementia. Drugs that can result in cognitive decline include:

- Antidepressants: tricyclic antidepressants (TCA), paroxetine
- Antiemetics: dimenhydrinate, ondansetron, scopolamine, prochlorperazine, promethazine, chlorpromazine
- Antiepileptics: carbamazepine, oxcarbazepine
- Antihistamines: first-generation (chlorpheniramine, diphenhydramine, doxylamine, hydroxyzine, cyproheptadine), second-generation (cetirizine)
- Antimuscarinics (class effect): darifenacin, fesoterodine, oxybutynin, solifenacin, trospium, tolterodine
- Antipsychotics (class effect): first- and second-generation antipsychotics
- Antiparkinsonian: amantadine, benztropine, trihexyphenidyl, procyclidine
- Antispasmodics: atropine, hyoscyamine
- Antiulcer: histamine-2 receptor antagonists (conflicting evidence), proton pump inhibitors (conflicting evidence)
- Hypnotics: zopiclone, zolpidem, zaleplon, eszopiclone, benzodiazepines (class effect where the greatest risk is with longer-acting agents e.g. chlordiazepoxide, diazepam, flurazepam, clonazepam, clorazepate)
- Muscle relaxants: cyclobenzaprine, methocarbamol, tizanidine

RATIONALE:

Correct Answer:

- **Oxybutynin** - Oxybutynin is an anticholinergic drug which is known to worsen cognition in elderly patients.

Incorrect Answers:

- **Ramipril** - This drug has no evidence of worsening cognition.
- **Acetylsalicylic acid** - This drug has no evidence of worsening cognition.
- **Indapamide** - This drug has no evidence of worsening cognition.

TAKE AWAY/KEY POINTS

TAKEAWAY/KEY POINTS:

Anticholinergic drugs such as oxybutynin can cause a decline in cognition in elderly patients.

REFERENCE:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca/.

The correct answer is: Oxybutynin

Question 7

ID: 50218

Incorrect

Flag question

Send Feedback

Which of the following statements regarding the use of benzodiazepines in dementia is **FALSE**?

Select one:

a. Diazepam is a preferred benzodiazepine to be used in patients with dementia ✔

b. Benzodiazepines are among the drugs that can worsen symptoms of dementia ✖

Rose Wang (ID:113212) this answer is incorrect. Benzodiazepines are among the drugs that can worsen symptoms of dementia.

c. Benzodiazepines may be used to treat severe agitation in patients who failed other interventions ✖

d. Benzodiazepines should be tapered in patients with dementia whenever possible ✖

Incorrect

Marks for this submission: 0.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Identify the role of benzodiazepines in patients with dementia.

BACKGROUND:

Benzodiazepines are a class of drugs that bind to GABA-A receptors on the postsynaptic GABA neuron. They enhance the inhibitory effects of GABA on neurons; causing hyperpolarization and stabilization (i.e., a less excitable state). Benzodiazepines can worsen dementia and increase falls risk; thus, their use should be avoided when possible. However, they may be used to treat severe agitation in patients with dementia who have failed other interventions. Short-acting benzodiazepines or benzodiazepines that do not have an active metabolite (such as lorazepam, oxazepam, or temazepam) should be used preferentially in the elderly population to reduce the occurrence of long-term side effects such as next-day sedation and dizziness. Abrupt discontinuation of benzodiazepines can result in withdrawal symptoms, including seizures, anxiety, and tremors. If benzodiazepine discontinuation is required, a slow taper (based on patient-specific factors such as duration of therapy, benzodiazepine choice, and presenting symptoms) is recommended.

RATIONALE:

Correct Answer:

- **Diazepam is a preferred benzodiazepine to be used in patients with dementia** - If benzodiazepines must be used in patients with dementia, short-acting agents or agents that do not have an active metabolite (such as lorazepam, oxazepam, and temazepam) should be used.

Incorrect Answers:

- **Benzodiazepines are among the drugs that can worsen symptoms of dementia.** - This statement is true.
- **Benzodiazepines may be used to treat severe agitation in patients who failed other interventions.** - This statement is true.
- **Benzodiazepines should be tapered and not discontinued abruptly whenever possible to prevent withdrawal symptoms.** - This statement is true.

TAKEAWAY/KEY POINTS:

Benzodiazepines can worsen dementia and increase falls risk; thus, their use should be avoided when possible. However, they may be used to treat severe agitation in patients with dementia who have failed other interventions. Short-acting benzodiazepines or benzodiazepines that do not have an active metabolite (such as lorazepam, oxazepam, or temazepam) should be used preferentially in the elderly population to reduce the occurrence of long-term side effects such as next-day sedation and dizziness.

REFERENCE:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Diazepam is a preferred benzodiazepine to be used in patients with dementia

Question 8

ID: 50173

Correct

Flag question

Send Feedback

LK is a 75-year-old male who resides in a nearby long-term care facility. Your pharmacy has a partnership with the long-term care facility and you handle all of the residents' medications. You know LK's daughter (a nurse) very well as she frequents your pharmacy often. Today she calls you to inform you that her father's physician has faxed over a new medication for him. The physician believes that LK has vascular dementia and that it is not mixed with Parkinson's disease, Alzheimer's disease or Lewy body dementia. You check the faxes and see a prescription for galantamine ER 8 mg PO once daily. LK's medical history is significant for hypertension, dyslipidemia, and diabetes. His medications include hydrochlorothiazide 25 mg PO daily, ramipril 5 mg PO daily, atorvastatin 40 mg

PO daily, and metformin 1000 mg PO BID. LK's daughter asks you if you think that galantamine is the most appropriate treatment option for vascular dementia.

Which of the following options is the most appropriate to suggest to LK's daughter?

Select one:

- a. Suggest that galantamine will slow down the progression of her father's vascular dementia ✖
- b. Suggest that donepezil has more evidence for vascular dementia and offer to contact her father's physician for a change ✖
- c. Suggest that memantine has more evidence for vascular dementia and offer to contact her father's physician for a change ✖
- d. Suggest that treating her father's modifiable cardiovascular risk factors is preferred instead ✔

Rose Wang (ID:113212) this answer is correct. There is no clear medication used to treat pure vascular dementia; treating modifiable cardiovascular risk factors should be considered.

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Understand the treatment options for vascular dementia.

BACKGROUND:

Vascular dementia (VD) is the second most common cause of dementia. Chronic reduction in blood flow to the brain such as from a stroke, transient ischemic attack (TIA) or blood vessel disease can cause VD. It can be progressive or sudden as opposed to Alzheimer's disease (AD), which is slowly progressive. Patients present with impairment in memory, executive function (organizing, planning, prioritizing, focusing on tasks, regulating emotions), attention, and language.

Patients who present with VD may benefit from antihypertensive therapy, especially those with elevated blood pressure levels (>140/90 mmHg). Patients with concomitant hypertension should be treated to a target SBP of <120 mmHg. However, strict adherence to such a tight target may increase the patient's risk of falls due to hypotension or dizziness secondary to high doses of antihypertensive medications.

In VD, there is no clear medication to use. Cholinesterase inhibitors and/or memantine are mainly used for patients who present with mixed VD with either Alzheimer's disease (AD), Parkinson's disease (PD), or Lewy body dementia (LBD). In some cases, cholinesterase inhibitors or memantine are used in vascular dementia, but the clinical benefit of this is largely unknown. For prevention of pure VD, consider treating modifiable cardiovascular risk factors that can increase VD risk.

RATIONALE:

Correct Answer:

- **There is no clear medication used to treat pure vascular dementia; treating modifiable cardiovascular risk factors should be considered.** - There is no clear medication used to treat pure vascular dementia; treating modifiable cardiovascular risk factors should be considered.

Incorrect Answers:

- **Suggest that galantamine will slow down the progression of her father's vascular dementia** - LK presents with pure vascular dementia, in which case treatment with a cholinesterase inhibitor does not appear to be beneficial.
- **Suggest that donepezil has more evidence for vascular dementia and offer to contact her father's physician for a change** - None of the cholinesterase inhibitors appear to have much evidence for the treatment of pure vascular dementia.
- **Suggest that memantine has more evidence for vascular dementia and offer to contact her father's physician for a change** - Memantine does not appear to have evidence for the treatment of pure vascular dementia.

TAKEAWAY/KEY POINTS:

In VD, there is no clear medication to use. Cholinesterase inhibitors and/or memantine are mainly used for patients who present with mixed VD with either Alzheimer's disease (AD), Parkinson's disease (PD), or Lewy body dementia (LBD). In some cases, cholinesterase inhibitors or memantine are used in vascular dementia, but the clinical benefit of this is largely unknown. For prevention of pure VD, consider treating modifiable cardiovascular risk factors that can increase VD risk.

REFERENCE:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Suggest that treating her father's modifiable cardiovascular risk factors is preferred instead

Question 9

You are working as a pharmacist in a medical clinic when a new medical student approaches you with

ID: 50221

Incorrect

Flag question

Send Feedback

a question. A patient has just been diagnosed with frontotemporal dementia (FTD) and the physician is thinking about starting them on medication. The student is confused about the differences in treatment that exist for the different subtypes of dementia (i.e. Alzheimer's dementia, vascular dementia, frontotemporal dementia, and Lewy body dementia) and was hoping you could explain it to them. Specifically, the student wants to know what FTD is and how it is treated relative to the other diseases.

All of the following are appropriate to mention to the medical student about FTD **EXCEPT**:

Select one:

a. Frontotemporal dementia (FTD) is caused by an accumulation of proteins in the frontal and/or temporal lobes ✖

b. Cholinesterase inhibitors should be used to slow down the decline in cognitive function associated with frontotemporal dementia (FTD) ✔

c. Memantine is ineffective for the treatment of frontotemporal dementia (FTD) ✖

d. Selective serotonin reuptake inhibitors (SSRI) have some evidence for treating symptoms of frontotemporal dementia (FTD) ✖

Rose Wang (ID:113212) this answer is incorrect. Selective serotonin reuptake inhibitors (SSRI) (citalopram and sertraline) may be helpful to treat behavioural symptoms associated with frontotemporal dementia (FTD).

Incorrect

Marks for this submission: 0.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Understand the treatment options for frontotemporal dementia.

BACKGROUND:

Frontotemporal dementia (FTD) is similar to Alzheimer's dementia (AD), however the accumulation of tau proteins or other intracellular proteins is generally restricted to the frontal and/or temporal lobes. These patients will present with cognitive impairment such as compulsiveness, inappropriate social behaviours, disinhibition (inability to hold back responses or inappropriate behaviour), lack of empathy, or changes in habits and beliefs.

Data is limited for the pharmacological treatment of FTD. Patients who are diagnosed with FTD should not take a cholinesterase inhibitor as it may worsen behavioural symptoms of FTD, specifically agitation. Memantine is not recommended due to the lack of benefit seen in clinical trials. Therefore, none of the conventional dementia medications (cholinesterase inhibitors and memantine) are used to treat FTD. Selective serotonin reuptake inhibitors (SSRIs) (citalopram and sertraline) may be helpful for the behavioural symptoms but did not improve the cognitive symptoms in FTD.

RATIONALE:

Correct Answer:

- **Cholinesterase inhibitors should be used to slow down the decline in cognitive function associated with frontotemporal dementia (FTD)** - Patients with frontotemporal dementia (FTD) should not use cholinesterase inhibitors because they may worsen behavioural symptoms, especially agitation.

Incorrect Answers:

- **Frontotemporal dementia (FTD) is caused by an accumulation of proteins in the frontal and/or temporal lobes** - Frontotemporal dementia (FTD) is caused by an accumulation of tau proteins or other intracellular proteins in the frontal and/or temporal lobes.
- **Memantine is ineffective for the treatment of frontotemporal dementia (FTD)** - Memantine is not recommended for the treatment of frontotemporal dementia (FTD) because of a lack of benefit seen in clinical trials.
- **Selective serotonin reuptake inhibitors (SSRI) have some evidence for treating symptoms of frontotemporal dementia (FTD)** - Selective serotonin reuptake inhibitors (SSRI) (citalopram and sertraline) may be helpful to treat behavioural symptoms associated with frontotemporal dementia (FTD).

TAKEAWAY/KEY POINTS:

None of the conventional dementia medications (cholinesterase inhibitors and memantine) are used to treat FTD. Selective serotonin reuptake inhibitors (SSRIs) (citalopram and sertraline) may be helpful for the behavioural symptoms but did not improve the cognitive symptoms in FTD.

REFERENCE:

[1] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Cholinesterase inhibitors should be used to slow down the decline in cognitive function associated with frontotemporal dementia (FTD)

Question 10

ID: 50211

JP is a 73-year-old female newly diagnosed with mild Alzheimer's disease. She lives with her daughter at home and her two grandchildren. JP usually picks up her grandchildren from school but over the

Correct

Flag question

Send Feedback

past few months, there have been a few occasions when she has forgotten. Her daughter says that this is completely out of character for her mother. JP has also been having trouble remembering to pay her bills. About 2 weeks ago, JP visited her family physician who started her on donepezil 5 mg PO once daily in the morning. Today her daughter calls and complains to you that the medication is not working. Her daughter has not noticed any improvements in her mother's condition as JP is still having difficulties with her memory. Her daughter reports that JP is adherent to the medication and is not experiencing any adverse effects from it.

Which of the following recommendations should you make at this time?

Select one:

a. Titrate donepezil to the target dose of 10 mg daily ✖

b. Switch donepezil to galantamine ✖

c. Discontinue donepezil ✖

d. Continue donepezil for a few more weeks and then titrate the dose if appropriate ✔

Rose Wang (ID:113212) this answer is correct. Donepezil should slowly be titrated every 4 weeks only. The medication can take 3-6 months to show benefit.

Correct

Marks for this submission: 1.00/1.00.

TOPIC: Alzheimer's Disease

LEARNING OBJECTIVE:

Understand when drug titration is indicated for Alzheimer's disease (AD).

BACKGROUND:

One of our goals of therapy for patients with AD is to preserve and stabilize cognitive function. This is often achieved modestly by drug therapies such as cholinesterase inhibitors and NMDA antagonists. Donepezil is a cholinesterase inhibitor that is indicated for use in mild to severe AD to stabilize and preserve cognitive function. Donepezil works by increasing acetylcholine levels in the brain, which we know there is an imbalance of in AD. It takes 3-6 months to show efficacy. It is important to note that efficacy in AD doesn't necessarily mean an improvement in cognition, but rather efficacy means slowing the progression/stabilizing cognitive decline. If a patient's cognitive function has not worsened while on the drug, this would mean the drug is working. If the patient is not experiencing adverse effects and their cognitive function has improved or remained stable, we can start to titrate up the dose as tolerated. The target dose of donepezil is 10 mg PO daily and the dose may be titrated up every 4 weeks. The reason for slow titration is to minimize side effects that the patient may experience, including nausea, vomiting, diarrhea, fatigue, sleep disturbances, increased urinary frequency, headache, anorexia/weight loss, bradycardia, and syncope. Note that patients are at risk for withdrawal symptoms secondary to abrupt discontinuation of cholinesterase inhibitor therapy and must be slowly tapered off the medication as well. Patients may be switched to another cholinesterase inhibitor within the same class if they experience cognitive decline despite being on a maximally tolerated dose, if they experience intolerable side effects, or if they have trouble with adherence (e.g. cannot swallow tablets). Specifically, if the patient still has cognitive impairment within the first year of initiation (at least 6 months) despite being on the maximum dosage, then consider switching to another cholinesterase inhibitor rather than starting combination therapy with memantine. This is because memantine provides little additional benefit to cognition, function (ADLs), behaviour, and mood in moderate to severe AD. Memantine may be started if patients have moderate to severe dementia and require therapy in addition to cholinesterase inhibitors to prevent further decline. Consider combination therapy in those who have been stable on a cholinesterase inhibitor for several years, who are now having a perceived lack of benefit from it. At this point, lack of treatment response is likely due to the natural course of the disease. Memantine may also be started as monotherapy in patients who did not tolerate cholinesterase inhibitor therapy.

RATIONALE:

Correct Answer:

- **Continue donepezil for a few more weeks and then titrate the dose if appropriate** - Donepezil should slowly be titrated every 4 weeks only. The medication can take 3-6 months to show benefit.

Incorrect Answers:

- **Titrate donepezil to the target dose of 10 mg daily** - Donepezil should slowly be titrated every 4 weeks only.
- **Switch donepezil to galantamine** - It is too early to determine if there has been treatment failure with donepezil as it has only been 2 weeks.
- **Discontinue donepezil** - It is too early to determine if there has been treatment failure with donepezil as it has only been 2 weeks.

TAKEAWAY/KEY POINTS:

Donepezil should only be titrated every 4 weeks to minimize side effects. It takes 3-6 months to show efficacy, with efficacy being defined as a slowdown in the progression of cognitive decline. Donepezil can be switched to another cholinesterase inhibitor if the patient's symptoms worsen or there is a lack of stabilization or increased speed of progression despite being on the maximum dosage.

REFERENCES:

[1] Aricept. In: Compendium of Pharmaceuticals and Specialties. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca. [2] Rockwood K and Bosma M. Dementia. In: Compendium of Therapeutic Choices. Ottawa, ON: Canadian Pharmacists Association. https://myrxtx.ca.

The correct answer is: Continue donepezil for a few more weeks and then titrate the dose if appropriate

Finish review